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Chapter 2 Getting Started

Installation of IHSDM

Before using this program, it needs to be installed locally on the designer's machine. The following workflow will describe the installation process:

Workflow 1: Installing IHSDM

FLH users should have ITS install the IHSDM software rather than attempting it themselves.

1. *Go to http://www.ihsdm.org/ihsdm_public/index.3.html#registration to register and download the files required to install the full distribution release of IHSDM.*
2. *Follow the directions on the webpage. IHSDM will allow the user to dictate where the program is to be loaded.*

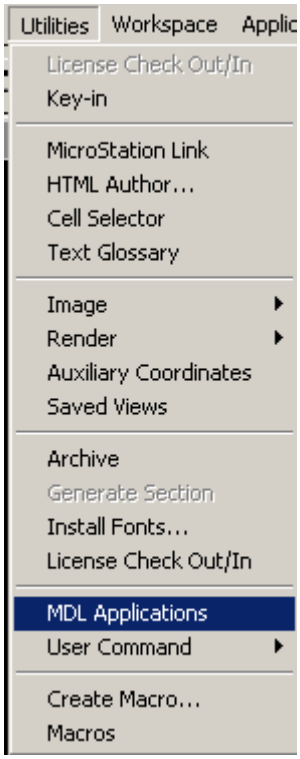
The location where the program is installed on the user's computer does not matter. It is recommended that the program is located in the same directory as other programs.

Creating an Alignment File

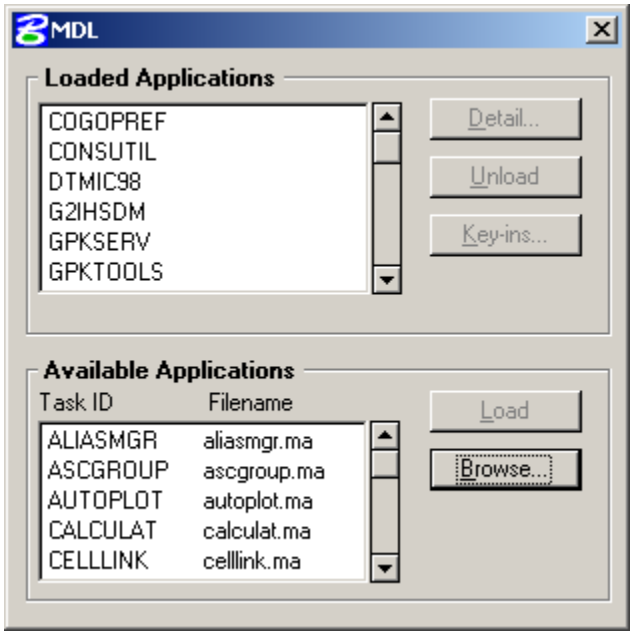
Before a project can be created in IHSDM, each alignment will need its horizontal and vertical elements in a GEOPAK .gpk file and a GEOPAK superelevation autoshapes input file. This information will need to be output from GEOPAK in a format that IHSDM will import. The following workflow will describe the process for creating this file.

Workflow 2: Creating an Alignment Input File from GEOPAK Data

1. *While in MicroStation go to Utilities>MDL Applications.*

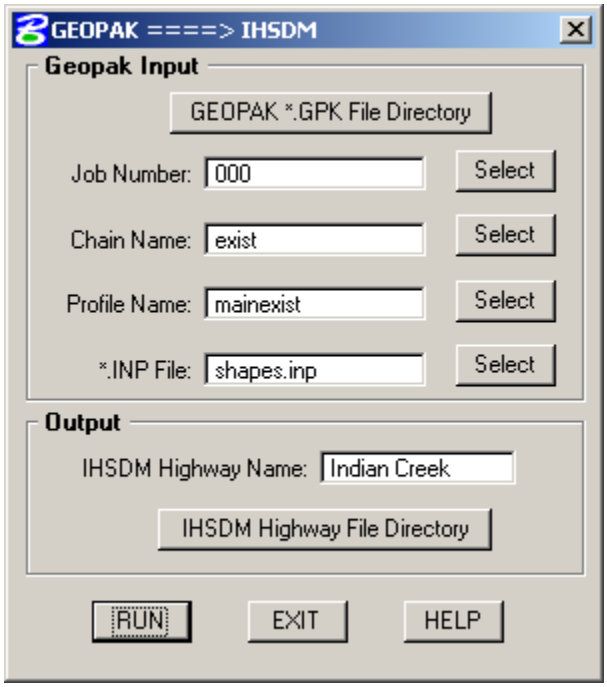


2. *The MDL Applications dialog box will appear.*



Browse for g2ihsdm.ma. It will be located in the IHSDM program directory, probably C:\IHSDM\geopak_to_ihsdm_api\.

3. *The following dialog box will appear:*



*Use the GEOPAK *.GPK File Directory button tool to pick the directory the .GPK file is located in.*

4. *Use the Select button to choose the Job Number. Even if the correct job number is highlighted, the user needs to single click on the correct number and pick OK. Otherwise the Select buttons for the Chain Name, Profile Name and shape input files will not work correctly.*
5. *Use the Select buttons to choose the correct Chain Name, Profile Name, and Shape input file name.*
6. *Type in the name of the highway that this alignment is created for. IHSDM will create an output file using that name.*
7. *Use the IHSDM Highway File Directory button to choose the directory the output file goes into. This will typically be in the IHSDM subdirectory for the project.*
8. *Pick RUN to create the output file.*

The output file will be an ASCII file with the highway name and a .txt extension. The user will use this file to import the geometric information into IHSDM.

If an error message appears while using the Select buttons the user can simply type in the correct information.

Creating an IHSDM Project

IHSDM has made the creation of a project easy by giving step-by-step instructions that work the same way the installation of new software would work. The following workflow will guide the user through this same process, but will add the information that is particular to the standard practices of FLH.

There are two different workflows for creating a project in IHSDM, depending on whether the user has already created another project or if this is their first time using the program. Workflow 3 will describe the process if the user is using IHSDM for the first time and Workflow 4 will describe the process for users creating another project.

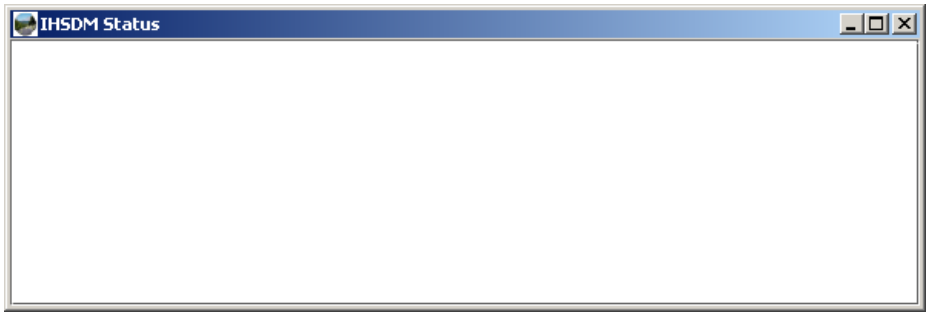
Workflow 3: Creating a Project in IHSDM for the First time

1. *Double click the IHSDM icon on your desktop.*

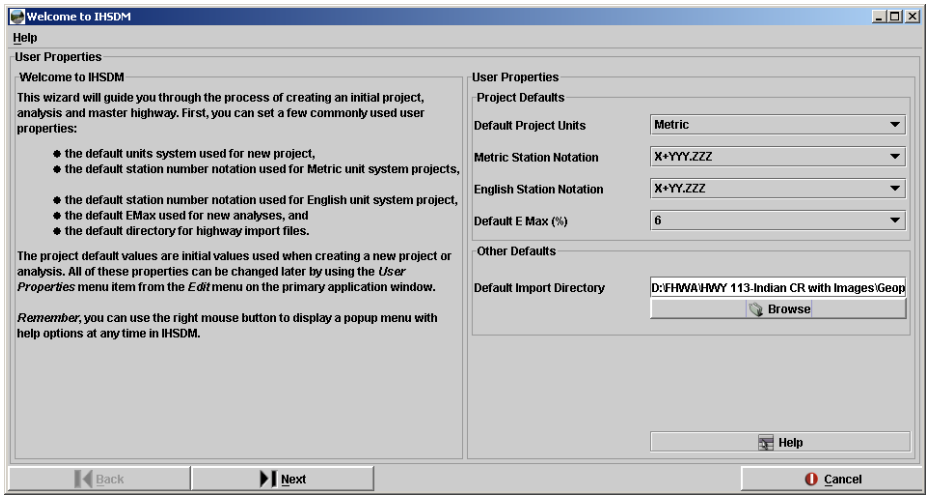
If the IHSDM icon is not on your desktop, contact your IT department to load IHSDM or go to http://www.ihsdm.org and follow the directions for downloading.

2. *Two windows will be activated:*

The IHSDM Status window. This is dialog box that IHSDM records all the activities during a run.

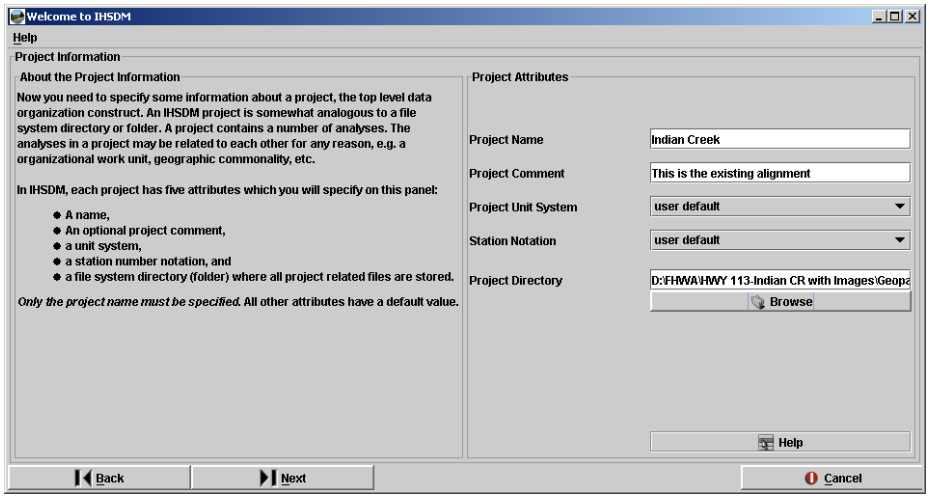


Welcome to IHSDM. This dialog contains the defaults that the user wants IHSDM to use. Set the defaults to the proper values and select Next.

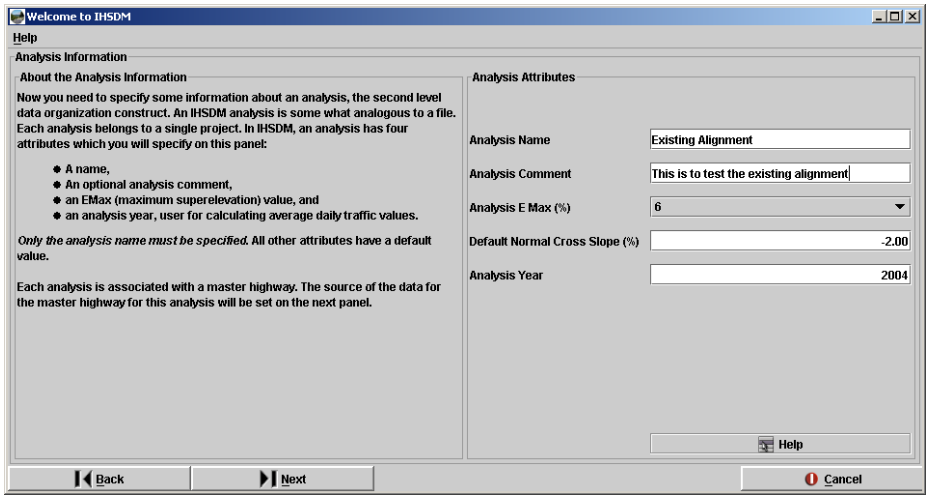


When the user sets the Default Import Directory using the browse key, make sure to just highlight the last directory in the structure and not double click on it. If the user double clicks on the last directory IHSDM will try to create another directory with the same name as the last directory.

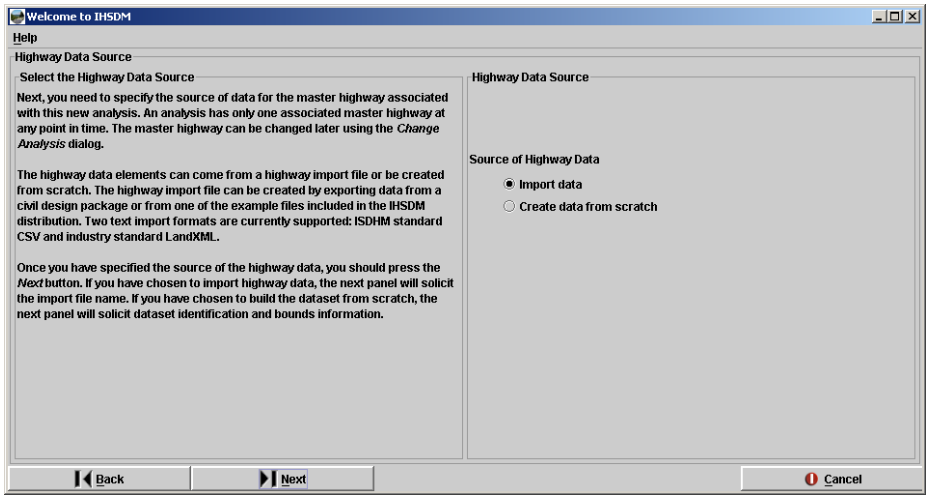
3. *The following dialog is the next one to pop up. Fill in the appropriate Project Information. If there is a need to change from the defaults set in Step 2 for Project Unit System or Station Notation, they can be changed here using the Options buttons. The above caution is valid for the Project Directory. Click on the Next button to go to the next dialog box.*



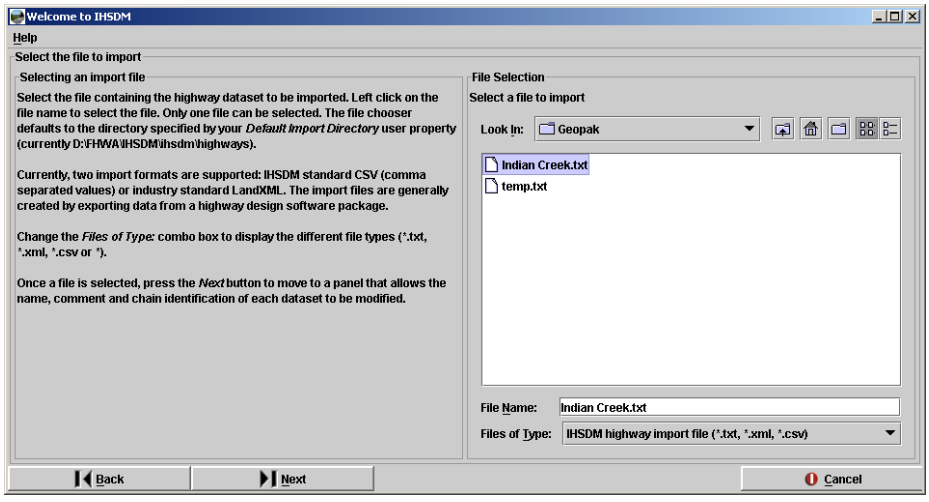
4. *The next dialog box will dictate which analysis is being done. This could be an analysis of the existing alignment, alternative alignment, or design phase. Also the user will input the year the analysis is to be done for. This is for the traffic and accident modules.*



5. *The next dialog asks how the initial information is input into IHSDM. Mark the Import data button. The data to import was created in Workflow 2.*

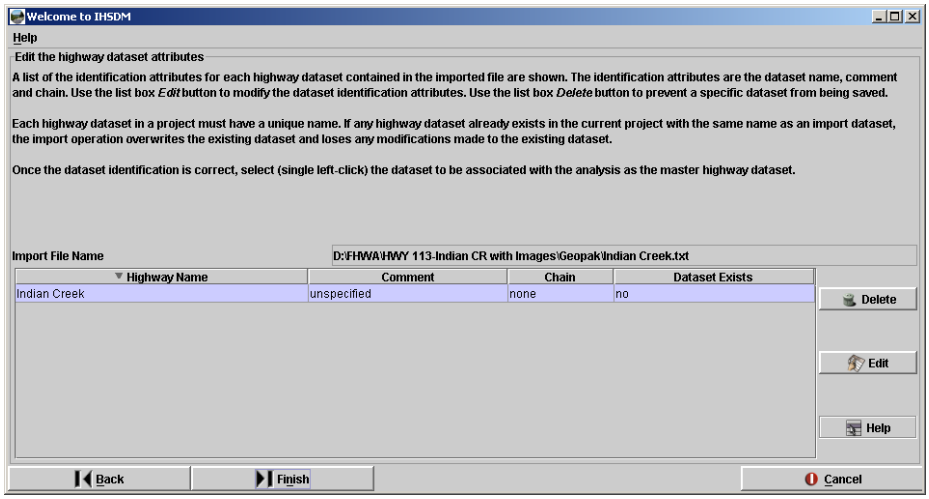


6. *The next dialog box asks for the file that was created in Workflow 2. Browse to the file and pick it.*

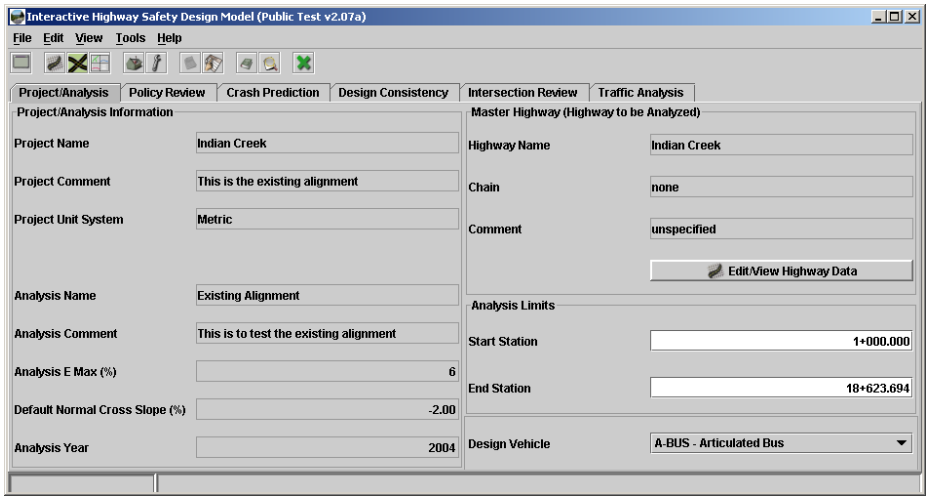


Select Next.

7. *The following dialog box will appear.*



8. *Next highlight the correct Master Highway and pick Finish. The following dialog box will appear:*

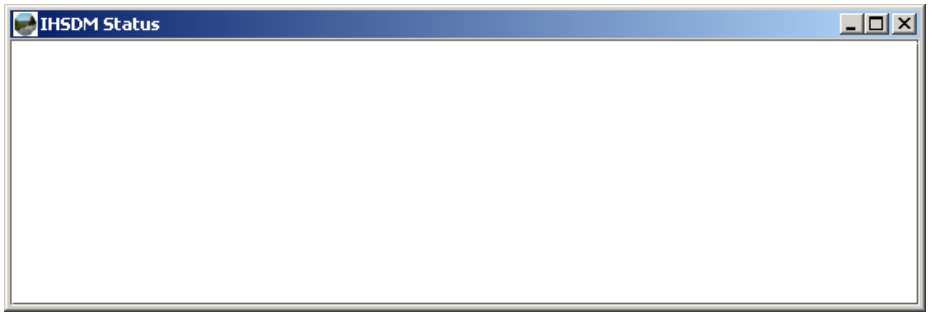


This is the main Dialog box that all analysis will start from.

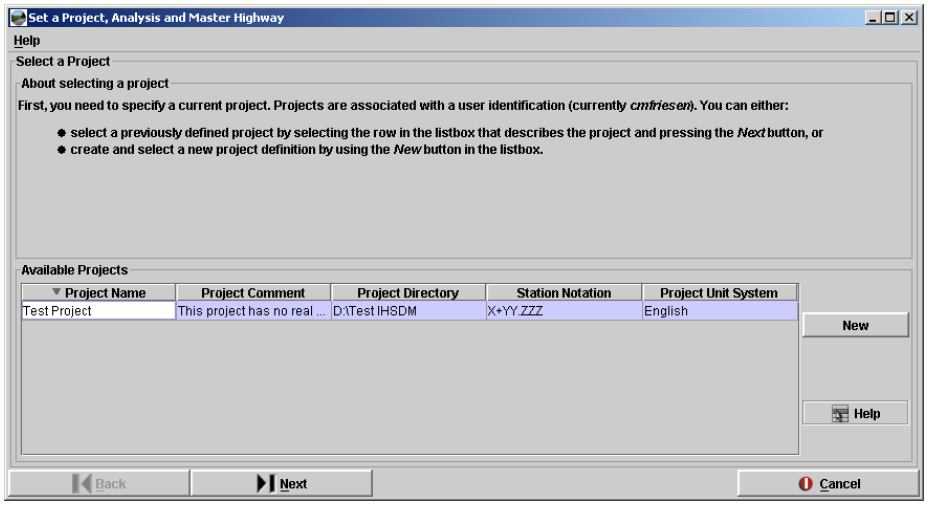
Workflow 4: Creating another Project in IHSDM

1. *Double click the IHSDM icon on your desktop.*
2. *Two windows will be activated:*

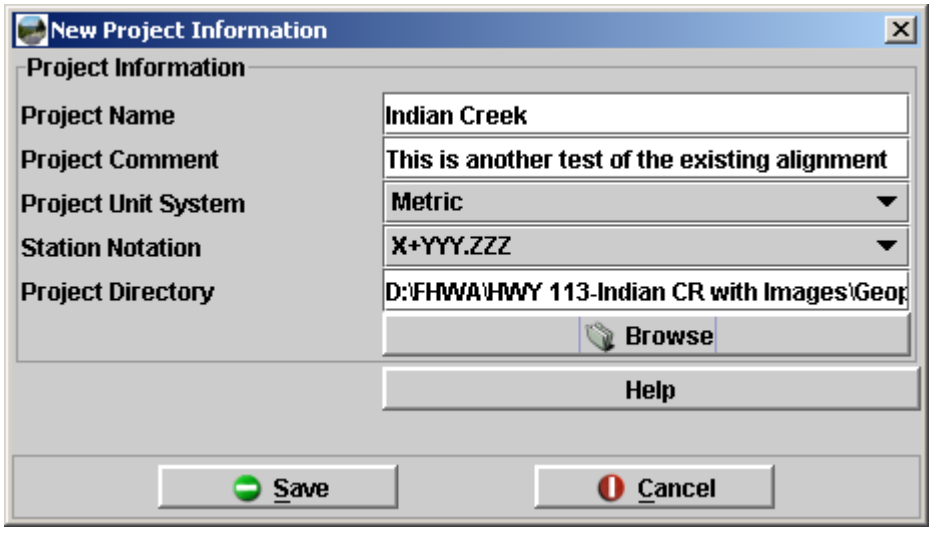
   The IHSDM Status window. This is dialog box that IHSDM records all the activities during a run.



Set a Project, Analysis and Master Highway window. This dialog contains the instructions to the user and where the user enters required information.



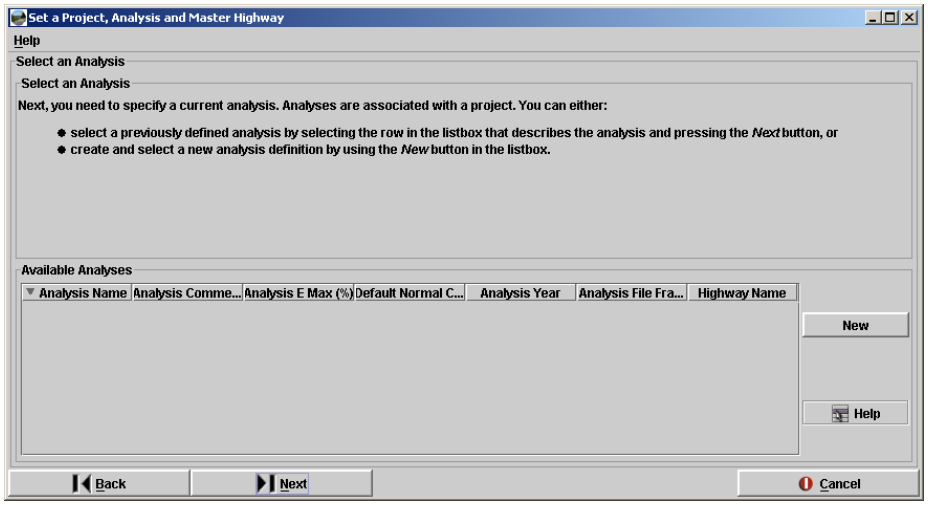
3. *To create a new project pick the New button on the right side of the dialog box. The following dialog box will appear.*



4. *Fill in the blocks as needed. Use the pull down menus for Project Unit System and Station Notation to set the desired values. Use the Browse button to select the project directory*

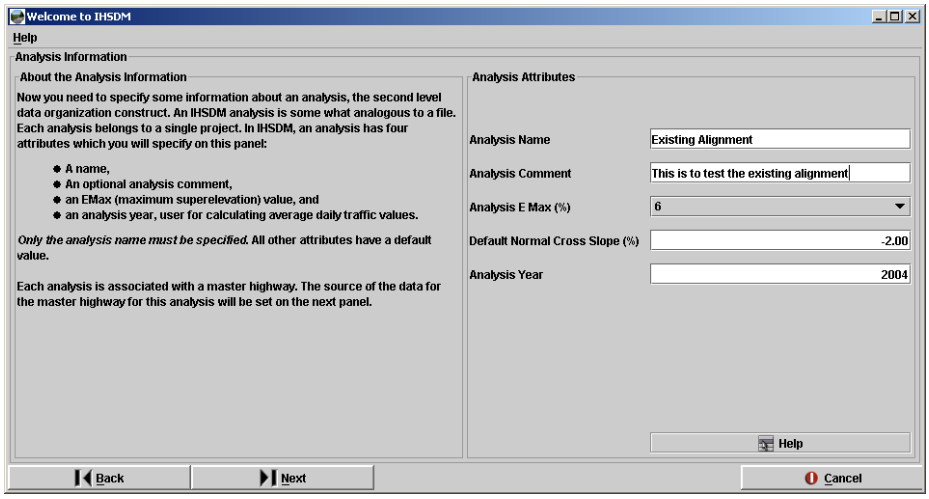
When the user sets the Project Directory using the browse key, make sure to just highlight the last directory in the structure and not double click on it. If the user double clicks on the last directory IHSDM will try to create another directory with the same name as the last directory.

5. *Pick the Save button. The project will now show up in the Set a Project, Analysis and Master Highway dialog box.*
6. *Make sure this new project is highlighted and select the Next button at the bottom of the dialog box.*
7. *The following dialog box will appear:*



This dialog box controls which analysis is being run. A different analysis will need to be run for each alignment change and each phase of the design. Since there have been no analysis on this new project yet, the only thing the user can do is pick the New button on the right.

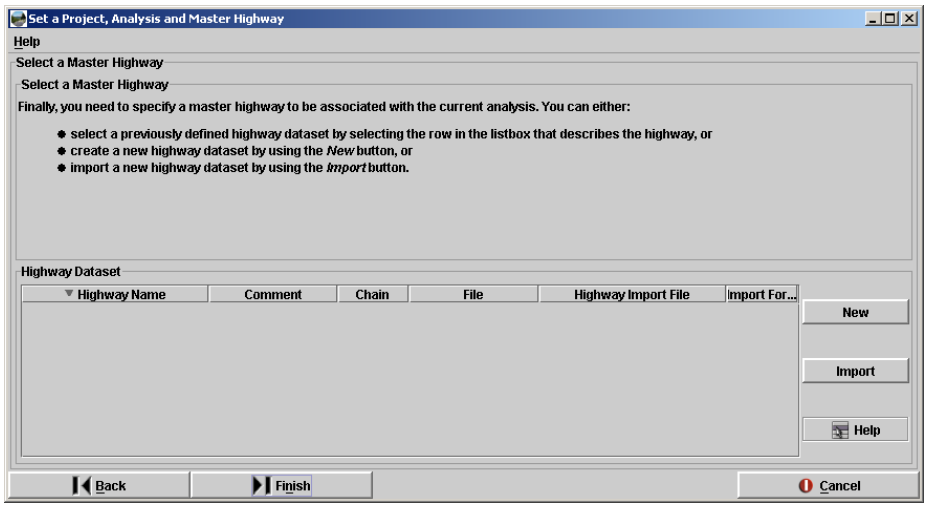
8. *The following dialog box will appear:*



9. *Fill in the appropriate information. Use the pull down menu to select the correct Analysis E Max (%). The analysis year is for the traffic and crash prediction modules. Pick Save.*

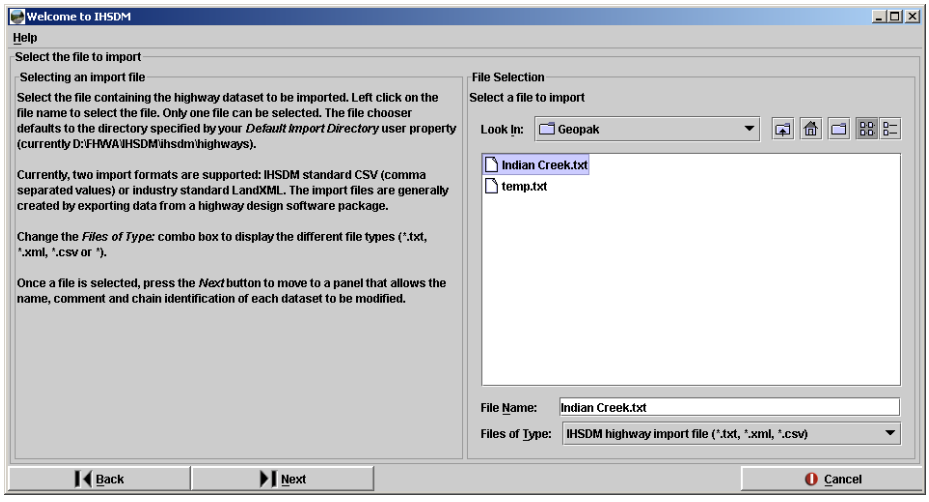
10. *Make sure this analysis is highlighted in the Select an Analysis window of the Set a Project, Analysis and Master Highway dialog box and pick Next.*

11. *The following dialog box will appear:*



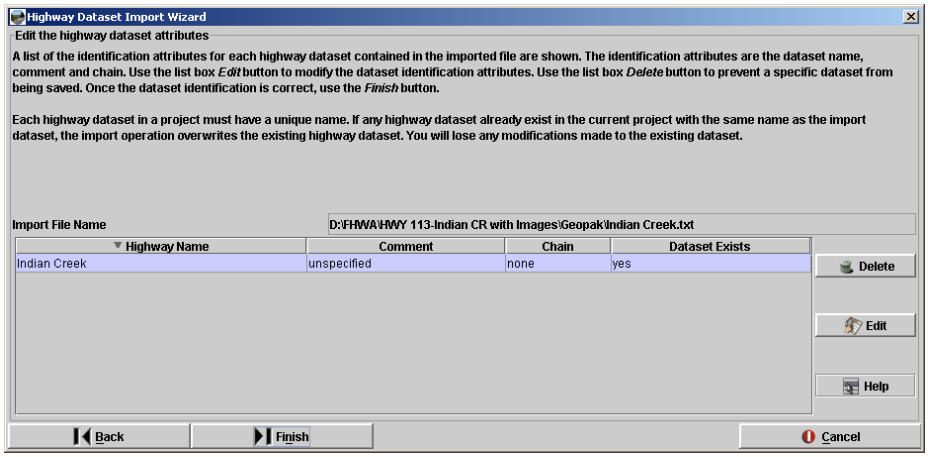
12. *This dialog box will allow you to select the alignment the analysis is to be run on. The alignment can be different versions or different roadways (i.e. side roads, driveways, etc.). Since there are no alignments yet, the user will have to Import an alignment through GEOPAK. Pick the Import button.*

13. *The following dialog box will appear:*



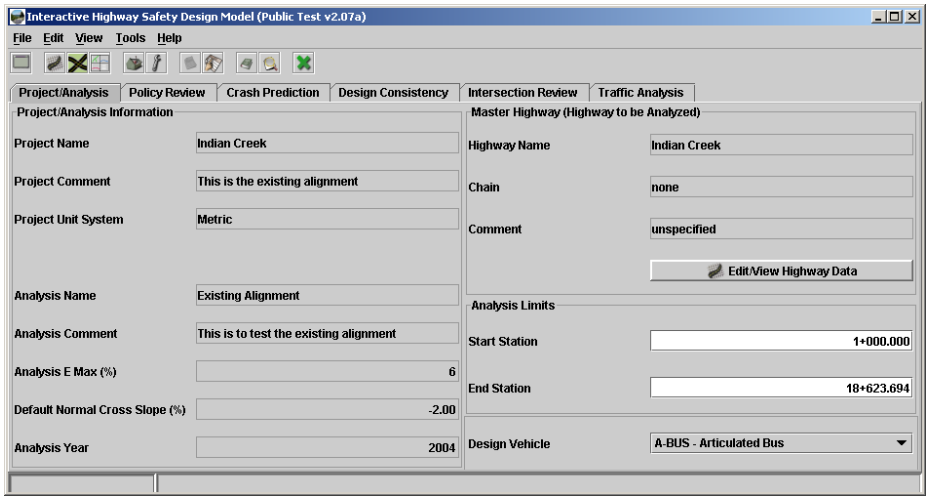
Use the browse tool to select the directory that the GEOPAK output file created in Step 3 of Workflow 2 is in. Then highlight the file. Pick Next.

14. *Once the information is input, IHSDM will add a line in the Highway Data Set Import Wizard. The user can add another alignment or pick Finish to go back to the Set a Project, Analysis and Master Highway dialog box.*



15. *Once the user is back in the Set a Project, Analysis and Master Highway dialog box, highlight the Analysis and pick Next.*

16. *Next highlight the correct Master Highway and pick Finish. The following dialog box will appear:*



This is the main Dialog box that all analysis will start from.

Opening an Existing Project

If the project and analysis has already been created, the process for accessing the project is much easier. The following workflow will describe the four steps needed.

Workflow 5: Opening an Existing Project in IHSDM

1. *Double click the IHSDM icon on your desktop.*

2. *Highlight the correct Project and pick Next.*

3. *Highlight the correct Analysis and pick Next.*
4. *Select the correct alignment and pick Finish. The same dialog box that is shown in Step 16 of Workflow 4 will appear.*

Once the project is created, the analysis and alignments can be changed in Steps 3 and 4 respectively prior to picking Next or Finish buttons.

Input of Design Data

This chapter described how to enter the horizontal, vertical, and superelevation data for use in IHSDM. The rest of the project data that is necessary to run the analysis can be input either by copying and pasting from a formatted Excel file or by using IHSDM's data input system. The next five chapters will describe the methods used for entering this data. The first part of each chapter will provide a workflow that will describe how to input the information using IHSDM. The second section will indicate the file name of the Excel spreadsheet to be used and explain the process for importing into IHSDM.